

**REMARKS**

Claims 1-24 are pending in the present application. By this reply, new claims 22-24 have been added, which are supported by the original disclosure, e.g., Fig. 5 and paragraphs [0039] and [0040] of the specification. No new matter is added. Claims 1, 14, and 18 are independent.

**35 U.S.C. §§ 102(b) & 103 Rejection**

Claims 1-3, 11, 14, 15 and 18 have been rejected under 35 U.S.C. § 102(a) as being anticipated by Belaid et al. Claim 4 has been rejected under 35 U.S.C. § 103 as being unpatentable over Belaid et al. as applied to claim 1 above, and further in view of Abdel-Mottaleb et al. Claims 5, 10, 17 and 20 have been rejected under 35 U.S.C. § 103 as being unpatentable over Belaid et al. as applied to claim 1 above, and further in view of Antonacopoulos et al. Claim 6 has been rejected under 35 U.S.C. § 103 as being unpatentable over Belaid et al. in combination with Antonacopoulos et al. as applied to claim 5 above, and further in view of Katsuyama. Claim 7 has been rejected under 35 U.S.C. § 103 as being unpatentable over Belaid et al. in combination with Antonacopoulos et al. as applied to claim 5 above, and further in view of McLeod et al. Claims 8 and 9 have been rejected under 35 U.S.C. § 103 as being unpatentable over Belaid et al. in combination with Antonacopoulos et al. as applied to claim 5 above, and further in view of Huang et al. Claims 12, 13, 16 and 21 have been rejected under 35 U.S.C. § 103 as being unpatentable over Belaid et al. as applied to claim 1 above, and further in view of Sakai et al. Claim 19 has been rejected under 35 U.S.C. § 103 as being unpatentable over Belaid et al. as applied to claim 1 above, and further in view of Mahoney et al. These rejections, insofar as they pertain to the presently pending claims, are respectfully traversed.

Belaid et al. is directed to a method of segmenting a composite image of pixels into a number of fields corresponding to lay-out elements of the image. However, Belaid et al. does not disclose the feature of “constructing separating elements corresponding to rectangular areas of adjacent pixels of the image having a background property indicative of a background of the image” (emphasis added) as recited in independent claim 1. Independent claims 14 and 18 recite the same or similar features in a varying scope.

In the Office Action, the Examiner alleges that Belaid et al. teaches this feature. However, Belaid et al. operates on existing black lines, whereas the present invention operates on background areas, e.g., invisible lines or white areas. Black lines do not represent background elements of the image. Thus Belaid et al. does not anticipate the claimed invention.

Furthermore, there is no motivation to modify Belaid et al. to render the claims obvious. By its very nature, the existing (foreground) lines are generally relatively well formed, i.e. generally of a more or less regular character. These black lines have been purposely put on the document to demarcate different areas from each other. Also, the demarcated areas generally “belong to each other”. This is exactly the reason why they are demarcated by the lines. On the other hand, background areas (an object of the present invention) demarcate areas of text or figures, and therefore are inherently irregular and indeterminate. A problem of segmenting a document into a number of fields that “belong together” is therefore much more difficult than segmenting a document into a number of fields that “already belong together” since these fields were demarcated by the foreground lines. Thus, independent claims 1, 14 and 18 are clearly patentable over Belaid et al.

Moreover, none of the secondary reference(s) applied to reject the claims teach or suggest at least the above noted features of claims 1, 14 and 18. For example, Abdel-Mottaleb deals with identifying form cells such as faces in a complex background. Abdel-Mottaleb’s method comprises a graph constructing step wherein a weight is assigned to the edges indicating an Euclidian distance between the vertices. Abdel-Mottaleb is silent about operating on background areas (e.g., invisible lines) in a method of segmenting a composite image of pixels into a number of fields corresponding to lay-out elements of the image. Thus, Abdel-Mottaleb does not overcome the deficiencies of Belaid et al.

Antonacopoulos et al. is directed to a method for document page segmentation comprising constructing a set of maximal rectangles, but does not teach the features missing from Belaid et al. In fact Antonacopoulos actually teaches away from combining with the teachings of Belaid et al. (see, e.g., page 342, par. 2.3, right column, lines 1-11).

The other cited art documents are even more remote, and do not overcome the deficiencies in the combinations of references as applied by the Examiner. Further, the other

documents have been cited against particular dependent claims in combination with Antonacopoulos. Thus the claims are patentable over the applied art.

At least for these reasons, independent claims 1, 14, and 18 and their dependent claims (due to their dependency) are patentable over the applied art. Accordingly, reconsideration and withdrawal of the rejections are respectfully requested.

### CONCLUSION

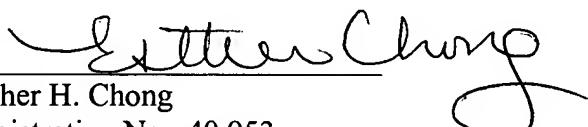
For the foregoing reasons and in view of the above clarifying amendments, the Examiner is respectfully requested to reconsider and withdraw any rejection of record, and to provide an early issuance of a Notice of Allowance.

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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Dated: February 19, 2008

Respectfully submitted,

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